

Curriculum Vitae –Shuyi S. Chen

Rosenstiel School of Marine and Atmospheric Sciences, University of Miami

4600 Rickenbacker Causeway, Miami, FL 33149

E-mail: schen@rsmas.miami.edu, <http://orca.rsmas.miami.edu> Phone: (305) 421-4048

PROFESSIONAL EXPERIENCE

Jun 2007 – Present	Professor, University of Miami
Jun 2006 – Present	Affiliate Scientist, National Center for Atmospheric Research
Oct 1998 – Present	Affiliate Professor, University of Washington
Jun 2000–May 2007	Associate Professor, University of Miami
Aug 1997– May 2000	Associate Research Professor, University of Miami
Jan 1996–Jul 1997	Assistant Research Professor, University of Washington
Sep 1991–Dec 1995	Research Associate, University of Washington
May 1990–Aug 1991	Research Associate, The Pennsylvania State University

EDUCATION

1990 Ph.D. Meteorology, The Pennsylvania State University

1985 M.S. Meteorology, University of Oklahoma

1982 B.S. Geophysics, Peking University

HONORS & AWARDS

- 2012 Fellow of the American Meteorological Society
- 2007 A.P. Sloan Foundation Leadership Award for Advancing Underrepresented Minority Students in Mathematics, Science and Engineering
- 2006 NASA Group Achievement Award for Tropical Cloud System Processes
- 2002 First Place Award, the National Collegiate Weather Forecasting Contest, the Faculty and Staff Division (2001-2002).

PROFESSIONAL MEMBERSHIP

1992 – The American Geophysical Union; 1984 – The American Meteorological Society

EDITORIAL RESPONSIBILITIES

2012 – Editorial Review for National Research Council Reports

2004 – 2006 **Editor**, *Weather and Forecasting*, America Meteorological Society.

2000 – 2003 **Associate Editor**, *Weather and Forecasting*, America Meteorological Society.

PANEL AND SCIENCE COMMITTEE

- The National Academies Board on Atmospheric Sciences and Climate (BASC)
- The National Academy of Science Committee on Progress and Priorities of US Weather Research and Research-to-Operations Activities
- American Geophysical Union – Committee on Cloud and Precipitation
- Science Advisory Board for Weather Research and Forecasting (WRF) Model
- Science Advisory Board for Developmental Testbed Center (DTC)

CONGRESSIONAL TESTIMONIES

- Testimony at the Hearing on: *Restoring U.S. Leadership on Weather Forecasting*, before the Subcommittee on Environment, Committee on Science, Space, and Technology of United States House of Representatives, 26 June 2013.
- Testimony at the Joint Hearing on: *The State of Hurricane Research and the National Hurricane Research Initiative Act of 2007*, before the Subcommittee on Energy and Environment and the Subcommittee on Research and Science Education, Committee on Science and Technology of United States House of Representatives, 26 June 2008.

RESEARCH

Dynamics and air-sea interactions in tropical cyclones/hurricanes, tropical convection and intraseasonal oscillations; development of new generation fully coupled atmosphere-wave-ocean model known as the University of Miami Coupled Model (UMCM) for coastal and hurricane research and prediction; field observations of global tropical cyclones and coupled atmosphere-ocean systems.

FIELD PROGRAM EXPERIENCE

- 2011 Principle Investigator/Mission Scientist of Aircraft Observation, Dynamics of Madden-Julian Oscillation (DYNAMO), Diego Garcia, BIOT
2010 Principle Investigator, Impact of Typhoons on the Ocean over the Pacific (ITOP), Guam
2005 Principle Investigator/Chief Scientist, Hurricane Rainbands and Intensity Change Experiment (RAINEX), Miami and Tampa, Florida
2003–04 Principle Investigator, Coupled Boundary Air-Sea Transfer (CBLAST)-Hurricane
1992–93 Satellite Scientist, Tropical Ocean and Global Atmosphere Coupled Ocean and Atmosphere Response Experiment (TOGA COARE), Honiara, Solomon Islands

SELECTED PUBLICATIONS

- Chen, S. S., W. Zhao, M. A. Donelan, and H. L. Tolman, 2013: Directional wind-wave coupling in fully coupled atmosphere-wave-ocean models: Results from CBLAST-Hurricane, *J. Atmos. Sci.*, **70**, 3198–3215.
Kerns, B. W., and S. S. Chen, 2014a: Equatorial dry air intrusion and related synoptic variability in MJO initiation during DYNAMO, *Mon. Wea. Rev.*, **142**, 1326–1343.
Kerns, B. W., and S. S. Chen, 2014b: ECMWF and GFS Model Forecast Verification During DYNAMO: Multi-scale Variability in MJO Initiation over the Equatorial Indian Ocean, *J. Geophys. Res.*, **119**, 3736–3755.
Judt, F., and S. S. Chen, 2014: A “Convective Explosion” and its Environmental Conditions in MJO Initiation Observed during DYNAMO, *J. Geophys. Res.*, **119**, 2781–2795.
Lee, C.-Y., and S. S. Chen, 2014: Stable boundary layer and its impact on tropical cyclone structure in a coupled atmosphere-ocean model, *Mon. Wea. Rev.*, **142**, 1927–1944.
Kerns, B. W., and S. S. Chen, 2013: Cloud clusters and tropical cyclogenesis: Morphology and large-scale environment of developing and non-developing systems, *Mon. Wea. Rev.*, **141**, 190–210.
Lee, C.-Y., and S. S. Chen, 2012: Symmetric and asymmetric structures of hurricane boundary layer in coupled atmosphere-wave-ocean models and observations, *J. Atmos. Sci.*, **69**, 3576–3594.
Donelan, M. A., M. Curcic, S. S. Chen, and A. K. Magnusson, 2012: Modeling Waves and Wind Stress, *J. Geophys. Res.*, **117**, DOI: 10.1029/2011JC007787.
Tao, W.-K., J. J. Shi, S. S. Chen, and co-authors, 2011: The impacts of microphysical schemes on hurricane intensity and Track, *Asia-Pacific J. Atmos. Sci.*, **47**, 1–16.
Judt, F., and S. S. Chen, 2010: Convectively Generated Potential Vorticity in Rainbands and Formation of Secondary Eyewall in Hurricane Rita of 2005, *J. Atmos. Sci.*, **67**, 3581–3599.
Dabberdt, W., R. E. Carbone, S. S. Chen, G. S. Forbes, E. Foufoula-Georgiou, R. Morss, J. T. Snow, X. Zeng, 2010: When Weather Matters, *The National Academies Press*, pp 181.
Davis, C., W. Wang, S. S. Chen, Y. Chen, K. Corbosiero, M. DeMaria, J. Dudhia, G. Holland, J. Klemp, J. Michalakes, H. Reeves, R. Rotunno¹, and Q. Xiao, 2008: Prediction of landfalling hurricanes with the Advanced Hurricane WRF Model, *Mon. Wea. Rev.*, **136**, 1990–2005.
Chen, S. S., J. F. Price, W. Zhao, M. A. Donelan, and E. J. Walsh, 2007: The CBLAST-Hurricane Program and the next-generation fully coupled atmosphere-wave-ocean models for hurricane research and prediction. *Bull. Amer. Meteor. Soc.*, **88**, 311–317.
Houze, R. A., S. S. Chen, B. Smull, W.-C. Lee, M. Bell, 2007: Hurricane intensity and eyewall replacement. *Science*, **315**, 1235–1239.
Rogers, R., M. Black, S. S. Chen, and R. Black, 2007: Evaluating microphysical parameterization schemes for use in hurricane environments. Part I: Comparisons with observations. *J. Atmos. Sci.*, **64**, 1811–1834.
Chen, S. S., J. Knaff, F. D. Marks, 2006: Effect of vertical wind shear and storm motion on tropical cyclone rainfall asymmetry deduced from TRMM. *Mon. Wea. Rev.*, **134**, 3190–3208.
Houze, R. A., S. S. Chen, and co-authors, 2006: The Hurricane Rainband and Intensity Change Experiment (RAINEX): Observations and modeling of Hurricanes Katrina, Ophelia, and Rita (2005). *Bull. Amer. Meteor. Soc.*, **87**, 1503–1521.
Mechem, D. B., S. S. Chen, and R. A. Houze, Jr., 2005: Momentum transport processes in the stratiform

- regions of mesoscale convective systems over the western Pacific warm pool, *Quat.J.Roy. Meteor. Soc.*, **132A**, 709-736.
- Lonfat, M., F. D. Marks, S. S. Chen, 2004: Precipitation distribution in tropical cyclones using the Tropical Rainfall Measuring Mission (TRMM) microwave imager: A global perspective. *Mon. Wea. Rev.*, **132**, 1645-1660.
- Rogers, R., S. S. Chen, J. E. Tenerelli, and H. E. Willoughby, 2003: A numerical study of the impact of vertical shear on the distribution of rainfall in Hurricane Bonnie (1998), *Mon. Wea. Rev.*, **131**, 1577-1599.
- Mechem, D. B., R. A. Houze, and S. S. Chen, 2002: Layer inflow into precipitating convection over the western tropical Pacific, *Quat. J. Roy. Meteor. Soc.*, **128**, 1997-2030.
- Chen, S. S., W. Zhao, J. E. Tenerelli, R. H. Evans, V. Halliwell, 2001: Impact of the Pathfinder sea surface temperature on atmospheric forcing in the Japan/East Sea, *Geophys. Res. Lett.*, **28**, No. 24, 4539-4542.
- Houze, R. A. Jr., S. S. Chen, D. Kingsmill, Y. Serra, S. E. Yuter, 2000: Convection over the Pacific warm pool in relation to the atmospheric Kelvin-Rossby wave. *J. Atmos. Sci.*, **57**, 3058-3089.
- Su, H., S. S. Chen, and C. S. Bretherton, 1999: Three-Dimension week-long Simulations of TOGA COARE Convective Systems Using the MM5 Mesoscale Model. *J. Atmos. Sci.*, **56**, 2326-2344.
- Chen, S. S., and R. A. Houze, Jr., 1997a: Diurnal variation and lifecycle of deep convective systems over the tropical Pacific warm pool. *Quat. J. Roy. Meteor. Soc.*, **123**, 357-388.
- Chen, S. S., and R. A. Houze, Jr., 1997b: Interannual variability of deep convection over the tropical warm pool. *J. Geophys. Res.*, **102**, 25,783-25,795.
- Chen, S. S., R. A. Houze, Jr. and B. E. Mapes, 1996: Multiscale variability of deep convection in relation to large-scale circulation in TOGA COARE. *J. Atmos. Sci.*, **53**, 1380-1409.
- Chen, S. S., R. A. Houze, Jr., B. E. Mapes, S. Brodzik, and S. Yuter, 1995: TOGA COARE satellite data summaries available via World Wide Web. *Bull. American Meteor. Soc.*, **76**, 329-333.
- Chen, S. S., and W. M. Frank, 1993: A numerical study of the genesis of extratropical convective mesovortices. Part I: Evolution and Dynamics. *J. Atmos. Sci.*, **50**, 2401 - 2426.

TEACHING (COURSES AT UM)

- Undergraduate: MSC103 Survey of Modern Meteorology
 MSC106 Hurricane and Society
 MSC240 Introduction to Meteorology
 MSC405 Dynamic Meteorology I
 MSC407 Advanced Weather Analysis and Forecasting
 MSC408 Tropical Meteorology I
- Graduate: MPO552 Synoptic Meteorology Laboratory
 MPO561 Tropical Meteorology
 MPO615 Numerical Weather Prediction
 MPO651 Dynamics and Modeling of Weather and Climate Systems
 MPO675 Current Topics in Modern Meteorology